

In re Patent Application of:

AMMAR

Serial No. 09/863,030

Filing Date: May 22, 2001

A1
Cont.
a DC signals layer having signal tracks and connections;

a ground layer having ground connections;

a device layer having capacitors and resistors embedded therein that connect to MMIC chips;

a top layer having cutouts for receiving MMIC chips therein;

a solder preform layer located between said device layer and said top layer for securing any MMIC chips; and

a channelization plate received over the multi-layer substrate board and having channels formed to receive MMIC chips and provide air isolation between transmit and receive signals.

10. (ONCE AMENDED) A multi-layer thick film substrate board used in transceiver modules comprising:

A2
a plurality of low temperature transfer tape layers, said layers comprising one of at least:

a DC signals layer having embedded DC signal tracks and connections;

a ground layer having ground connections;

a device layer having capacitors and resistors embedded therein that connect to MMIC chips;

a top layer having cut-outs that receives MMIC chips therein; and

a solder preform layer located between said device layer and said top layer for securing any MMIC chips received within the cut-outs of the top layer.

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16. (ONCE AMENDED) A thick film millimeter wave transceiver module comprising:

A³ base plate;

a multi-layer, thick film substrate board received on said base plate and formed from a plurality of layers of low temperature co-fired ceramic material, said layers comprising one of at least

a DC signals layer having embedded DC signal tracks and connections;

a ground layer having ground connections;

a device layer having capacitors and resistors embedded therein;

a top layer having cut-outs for receiving MMIC chips;

a solder preform layer located between the device layer and top layer;

at least one MMIC chip received on the solder preform layer and secured by a solder connection thereto and operatively connected to said layers, including said embedded DC signal tracks and connections and capacitors and resistors embedded in the device layer; and

a channelization plate received over the formed multi-layer substrate board and having channels formed to receive MMIC chips and provide air isolation between transmit and receive signals.

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26. (ONCE AMENDED) A method of forming a thick film millimeter wave transceiver module comprising the steps of:

A4 forming a base plate;

forming a thick film, multi-layer substrate board from a plurality of layers of low temperature co-fired ceramic material;

receiving the thick film, multi-layer substrate board on the base plate, wherein the substrate board comprises one of at least

a DC signals layer having signal tracks and connections;

a ground layer having ground connections;

a device layer having capacitors and resistors embedded therein;

a top layer having cutouts for receiving MMIC chips therein; and

securing the MMIC chip by solder onto the thick film multi-layer substrate board and operatively connecting the capacitors and resistors embedded within the device layer to the MMIC chip.

REMARKS

Claims 1-26 remain in this application. Claims 1, 10, 16 and 26 have been amended.

Applicant thanks the Examiner for the detailed study of the instant application and prior art.